

MOD14-(PGE30) Collection 6

Fire Test Assessment

Updated on 11/12/2010

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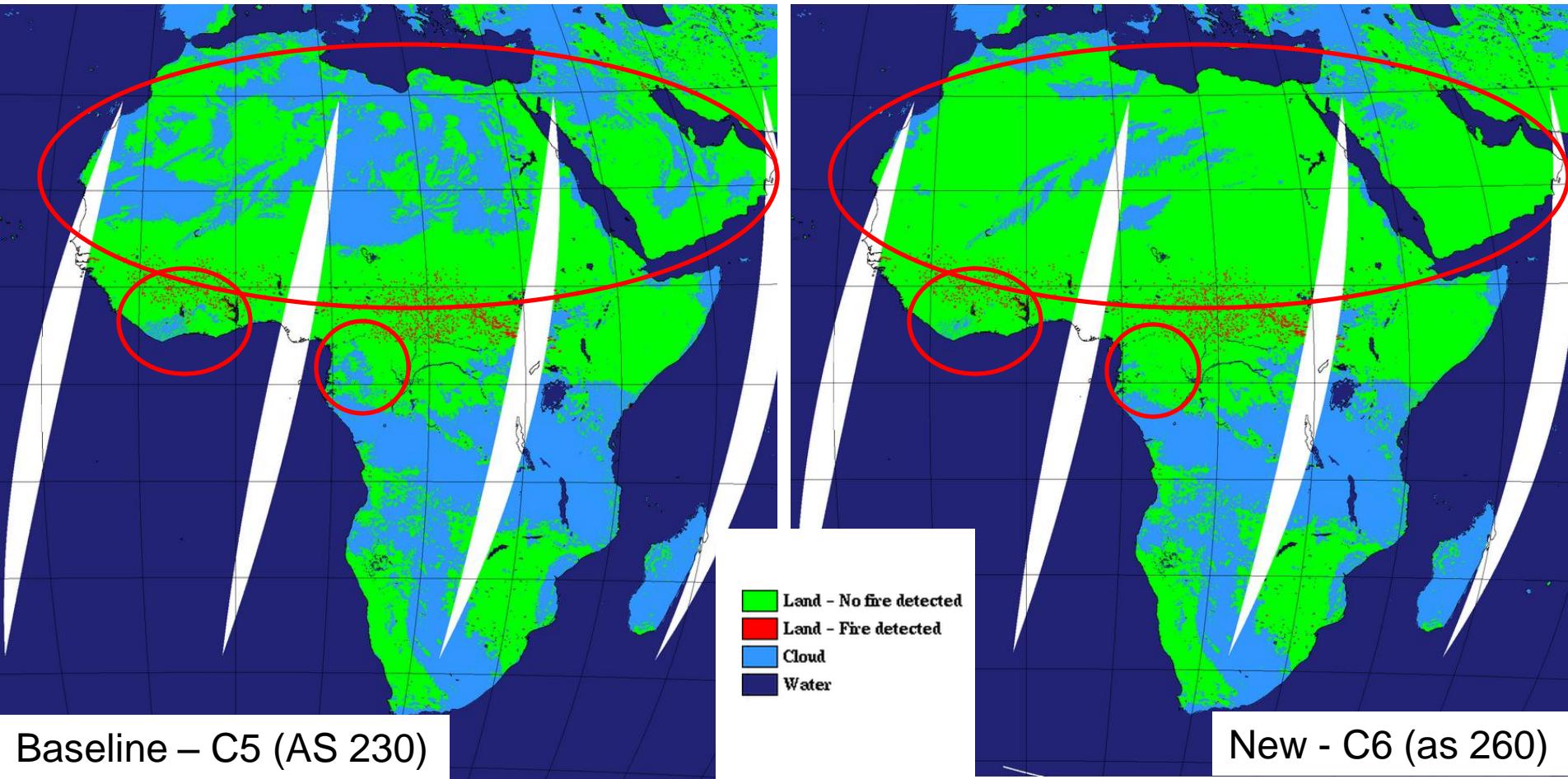
MOD14 C6 PGE30 Test

Observation:

- **Significant improvement in flagging of the cloud mask in the C6 version of Fire product.** The flagging of cloud mask in the C5 version of the Fire product was largely incorrect. In most cases the cloud mask in the C6 version of the fire product matches the internal cloud mask in MOD09 and the cloud mask in the MOD35 product, though some minor differences present in some of the granules.
- Generally, there is little to no difference in fire detection between the C5 and C6 product. However, instances of differences such as missing fires do exist in small occurrences.
- **Source / Data periods:**
 - Collection 6 Test Archive set # 230 (baseline) / 260 (new)
 - Two 8 day periods: 2003(001-008), 2003(193-200)

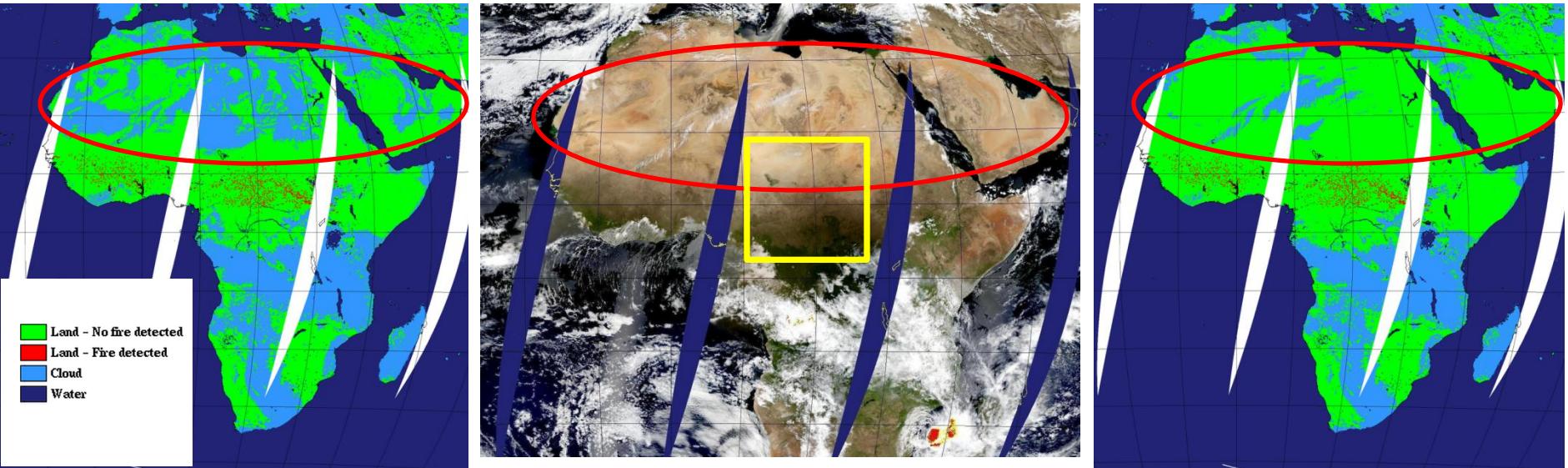
Cloud differences visible in the global browse images

MOD14 (PGE 30): Day 2003.007



- Cloud differences are observed across the arid desert regions along the Tropic of Cancer (highlighted by the red rings) with additional areas across central Africa.
- Cloud differences also exist within other continents and time periods.

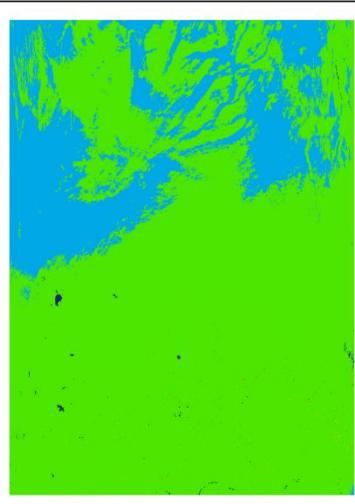
Clouds from C5 L2 Fire, C5 L2 Surface Reflectance, and C6 L2 Fire MOD14(PGE30): 2003.007



- Close agreement in the cloud mask is shown between the C6 fire product when compared to the MOD09 surface reflectance (red rings).
- Spatial subset of swath 2003.007.0915 is outlined by the yellow box and examined in the next slide.

Visual Comparison of Clouds: Swath 2003.007.0915

(MOD14, MOD35, MOD09)



MOD14 Baseline - C5 (230)



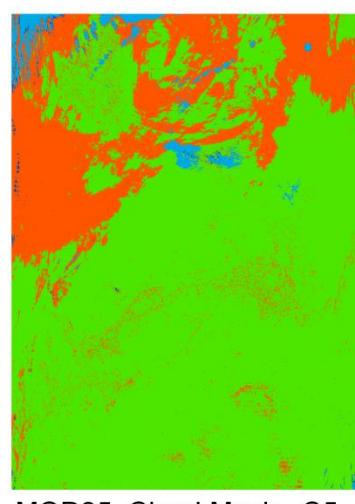
MOD09 C5 - surface refl.



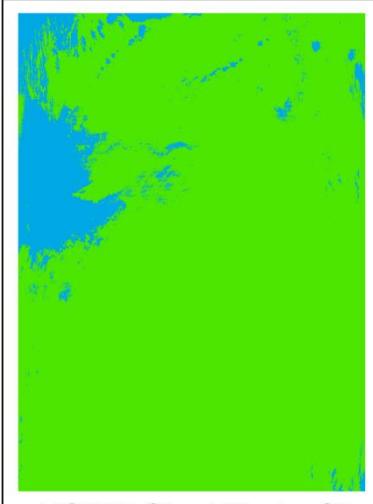
MOD14 New - C6 (260)

MOD14 Fire Mask

Water
Clouds
Non-fire clear land
Low-confidence fire
Nominal-confidence fire
High confidence fire



MOD35 Cloud Mask - C5



MOD09 Cloud Mask - C5

Unobstructed FOV Quality Flag, Bit 1-2

00	Cloudy
01	Uncertain
10	Probably Clear
11	Confident Clear

1km Reflectance Data State QA

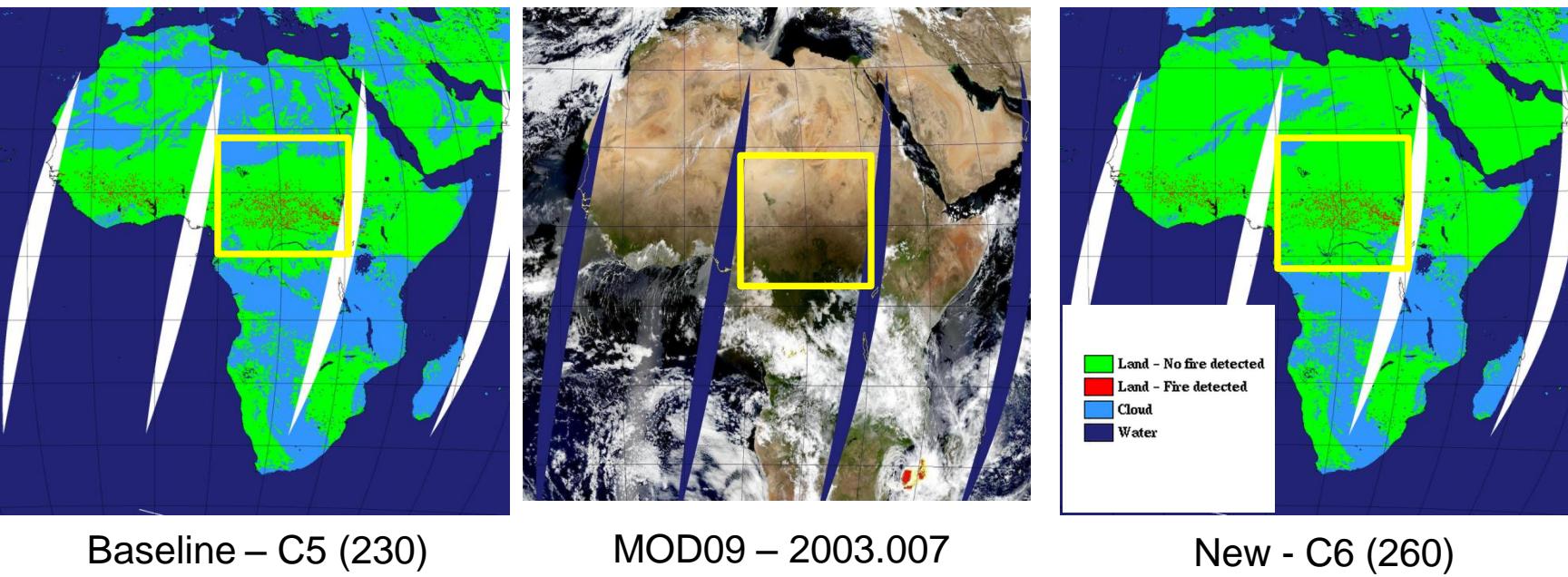
Bit 10 - Internal Algorithm Flag

Clear
Cloudy

- **Top row:** Differences in cloud mask shown between MOD14 (C5 and C6) when compared to MOD09 surface reflectance.
- **Bottom Row:** Unpacked cloud mask bits of MOD35 and MOD09.

Verification of Processing parameters for the C5 and C6 MOD14(PGE30)

Time period 2003.007



- C5 and C6 of PGE30 tested were generated using the same data process.
- The yellow box outlines swath 2003.007.0915

Baseline – C5 (230)

Input Pointer:

- MOD021KM.A2003007.0915.005.2010219125900.hdf
- MOD03.A2003007.0915.005.2010219125007.hdf

PGE Version: 5.0.6

Processing Environment:

- Linux minion5461 2.6.29.1-server-4mnb #1 SMP

New - C6 (260)

Input Pointer:

- MOD021KM.A2003007.0915.005.2010219125900.hdf
- MOD03.A2003007.0915.005.2010219125007.hdf

PGE Version: 6.0.0

Processing Environment:

- Linux minion5457 2.6.29.1-server-4mnb #1

Global Attributes of C5 and C6 MOD14(PGE30)

2003.007.0915

C5 Global Attributes

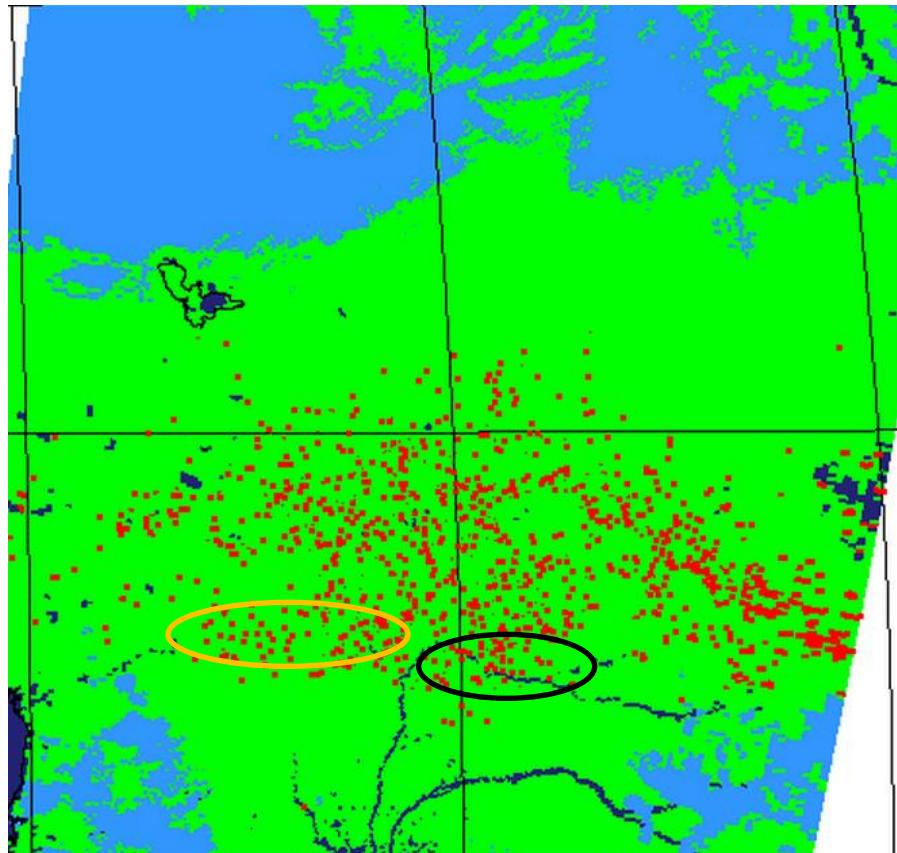
- Name: MOD14.A2003007.0915.**005**.2010229054904.hdf
- Attribute #1: "FirePix" : 2157
- Attribute #2: "MissingPix" : 0
- Attribute #3: "LandPix" : 2745272
- Attribute #4: "WaterPix" : 3348
- Attribute #5: "WaterAdjacentFirePix" : 0
- Attribute #6: "CloudAdjacentFirePix" : 0
- Attribute #7: "UnknownPix" : 0
- Attribute #8: "LandCloudPix" : 606041
- Attribute #9: "WaterCloudPix" : 0
- Attribute #10: "GlintPix" : 0
- Attribute #11: "GlintRejectedPix" : 0
- Attribute #12: "CoastRejectedPix" : 0
- Attribute #13: "HotSurfRejectedPix" : 1
- Attribute #14: "DayPix" : 2748620
- Attribute #15: "NightPix" : 0
- Attribute #16: "Satellite" : "Terra"
- Attribute #17: "ProcessVersionNumber" :"5.0.1"
- Attribute #18: "MOD021KM input file"
"/MODAPSops5/archive/f5461/running/AM1M_L1m/8939142/
MOD021KM.A2003007.0915.005.2010219125900.hdf"
- Attribute #19: "MOD03 input file"
"/MODAPSops5/archive/f5461/running/AM1M_L1m/8939142/
MOD03.A2003007.0915.005.2010219125007.hdf"
- Attribute #20: "SystemID" : "Linux minion5461 2.6.29.1-
server-4mnb #1 SMP Mon Apr 20 20:10:24 EDT 2009 i686"

C6 Global Attributes

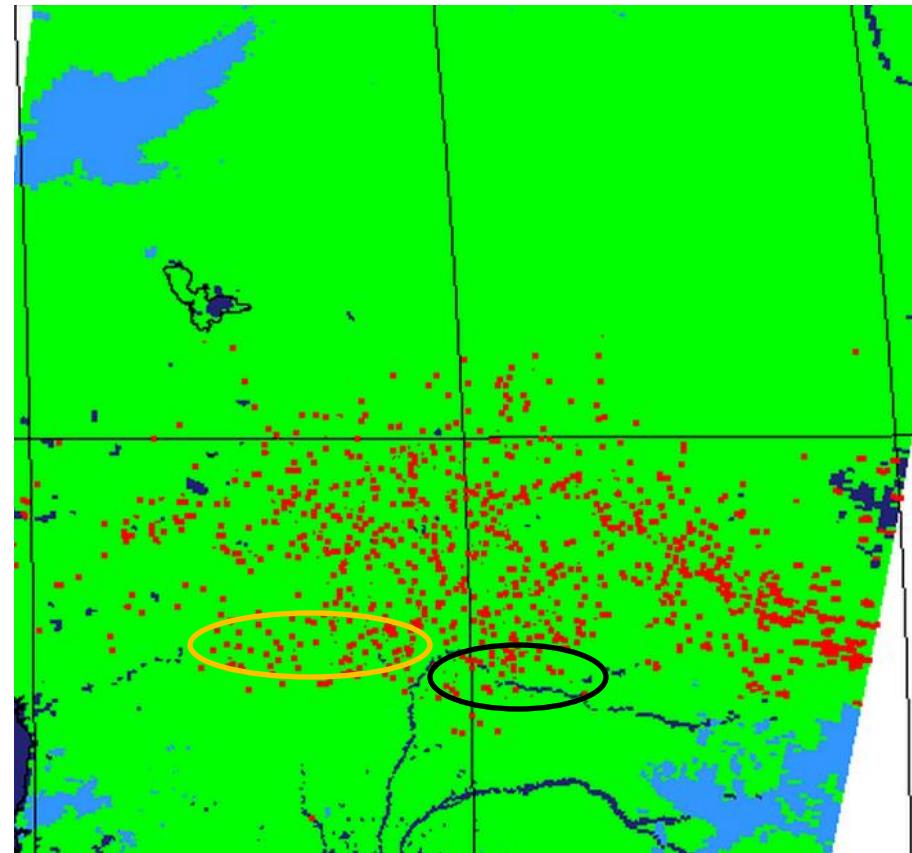
- Name : MOD14.A2003007.0915.**005**.2010253202934.hdf
- Attribute #1: "FirePix" : **2138**
- Attribute #2: "MissingPix" : 0
- Attribute #3: "LandPix" :2745272
- Attribute #4: "WaterPix" :3348
- Attribute #5: "WaterAdjacentFirePix": 0
- Attribute #6: "CloudAdjacentFirePix": 0
- Attribute #7: "UnknownPix": 0
- Attribute #8: "LandCloudPix": **60573**
- Attribute #9: "WaterCloudPix": 0
- Attribute #10: "GlintPix" : 0
- Attribute #11: "GlintRejectedPix": 0
- Attribute #12: "CoastRejectedPix" : 0
- Attribute #13: "HotSurfRejectedPix" :1
- Attribute #14: "DayPix" : 2748620
- Attribute #15: "NightPix": 0
- Attribute #16: "Satellite" : "Terra"
- Attribute #17: "ProcessVersionNumber" : "**6.0.4**"
- Attribute #18: "MOD021KM input file"
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MOD021KM.A2003007.0915.005.2010219125900.hdf"
- Attribute #19: "MOD03 input file"
"/MODAPSops5/archive/f5457/running/AM1M_L1m/10621636/
MOD03.A2003007.0915.005.2010219125007.hdf"
- Attribute #20: "SystemID" : "Linux minion5457 2.6.29.1-
server-4mnb #1 SMP Mon Apr 20 20:10:24 EDT 2009 i686"

MOD14 (PGE30):2003.007.0915

Spatial Subset



Baseline – C5 (230)

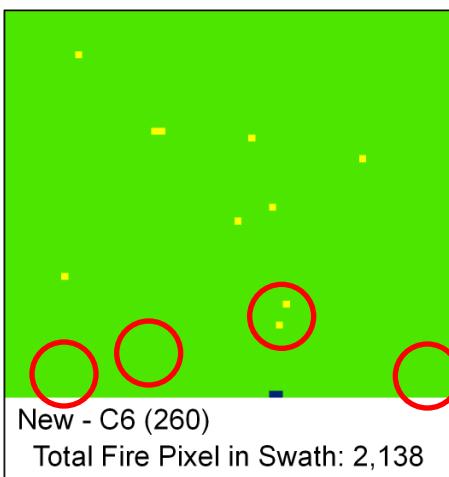
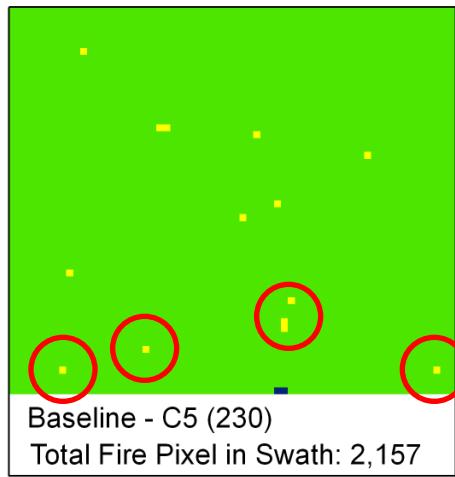


New - C6 (260)

- Loss of 19 fire pixels in the new C6 product when compared to C5.
- Areas of differences shown in black and gold rings.
- Black rings shown at smaller scale in next slide.

MOD14 (PGE30) 2003.007.0915

A Spatial Subset (Central Africa)



- Missing fires identified by red rings.
- Confidence level of identified fire pixels remain similar in C5 and C6.

MOD14 Fire Mask

	Water
	Clouds
	Non-fire clear land
	Low-confidence fire
	Nominal-confidence fire
	High confidence fire